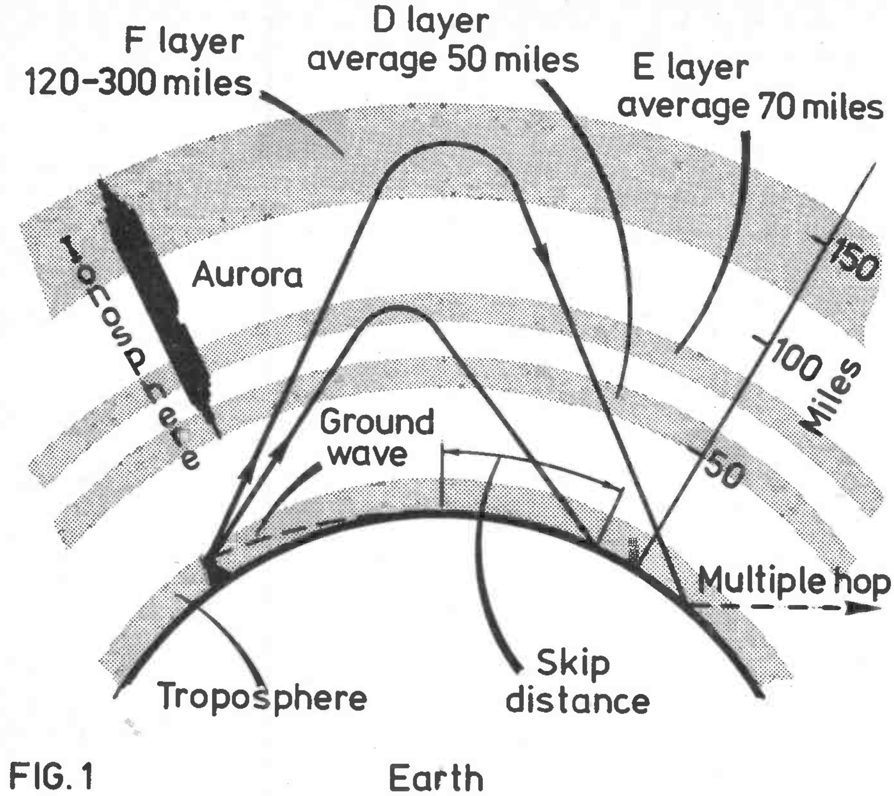

FIG. 1

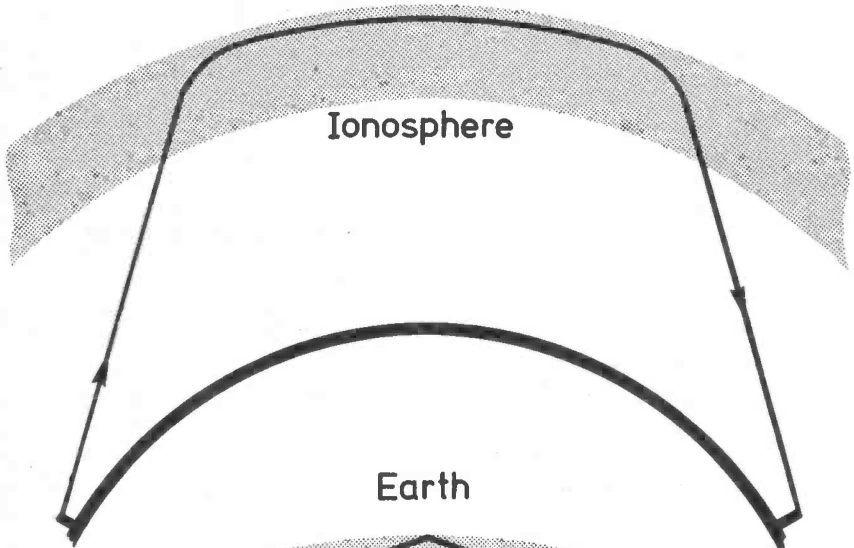

FIG. 2

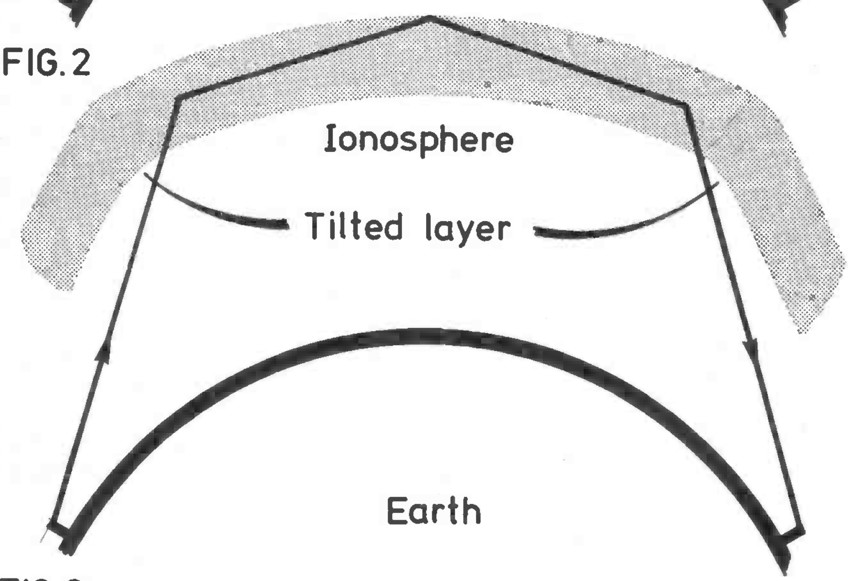

FIG. 3

160m to 10m) in nine seperate bands so that the effects or propagation changes can vary considerably from band to band. The classical diagram of **Fig. 1** is almost too well-known to warrant yet another description of what goes on in the ionosphere some 200 or so miles over our heads. We can only portray events in two-dimensional diagrams so it must be remembered in looking at the diagram that the earth is really a sphere, almost, or huge ball and that the ionosphere and the various layers depicted are hollow spheres or shells around the earth, all of considerably varying density from almost one minute to another and very "patchy" indeed, as well as varying in depth and height above the earth's surface, as depicted in **Fig. 1.**

Conductivity in thin air

We should not forget the names of two pioneers in ionospheric research, Appleton for his discovery of the existence of the F layer and Heaviside in connection with the E layer. The ionosphere is formed basically by the action of the sun on the rarified gases at heights from 50 or so miles above the earth out to around 300 miles, the degree of ionisation depending upon a number of factors such as sunspot activity and time of day. If the sunspot factor is strong enough the E and F layers may themselves each

Fig. 1 This diagram illustrating the propagation of radio signals is out of all proportion compared to reality. The height of the F layer, for example, is only a couple of hundred miles but the hop via the F layer may be a couple of thousand miles between transmitter and receiver.

Fig. 2 One suggestion as to how chordal-hop transmissions may move inside the ionosphere, requiring very low angles of take-off for the signal.

Fig. 3 Should there be areas of the ionosphere that are tilted relative to the rest of the layer then the chordal-hop mode could result, as shown here.